**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**REGION 5**
77 West Jackson Boulevard
Chicago, Illinois 60604

**DATE:** APR 14 2014

**SUBJECT:** INSPECTION REPORT – Century Plating Company, Inc., Chicago, IL

**FROM:** Katie Owens, Environmental Engineer

**THRU:** Nathan A. Frank, Chief
Air Enforcement and Compliance Assurance Section, (IL/IN)

**TO:** File

**Date of Inspection:** December 5, 2013

**Attendees:** Monica Onyszko, Environmental Engineer, U.S. EPA
Katie Owens, Environmental Engineer, U.S. EPA
Victor LaPorta, Vice President, Century Plating Company, Inc.
Mary Jane Koltse, Office Manager, Century Plating Company, Inc.

**Purpose of Inspection:** The purpose of the inspection was to investigate compliance of Century Plating Company, Inc. (Century) with the National Emission Standards for Hazardous Air Pollutants for Chromium Emissions From Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks at 40 C.F.R. Part 63, Subpart N.

**Company Description and Background:**

Location: 2939 North Oakley Avenue, Chicago, Illinois 60618

Primary Contact: Victor LaPorta, Vice President, Century Plating Company, Inc.

Century Plating Company, Inc. specializes in nickel and decorative, hexavalent chromium plating of automotive parts.

**Opening Discussion and Process Overview**

Monica Onyszko and I (we) arrived at Century at about 9:00 am. We parked a few blocks away due to parking restrictions. On the walk toward Century we noticed a sugary, cinnamon smell. We arrived in the lobby at Century around 9:20 am where we met Mary Jane Koltse, Century's Office Manager. We showed her our credentials and explained that we were at Century to perform an unannounced Clean Air Act (CAA) inspection which would involve a tour of the facility. We asked for Century's environmental or general manager. Ms. Koltse stated that we should talk to Victor LaPorta, Century's Vice President. Mr. LaPorta met us in reception and escorted us into the facility to the conference room.

We began the opening conference by asking Mr. LaPorta if he could provide general information about Century. Mr. LaPorta stated that Century has been at this location since 1953, though it began in another location in 1948. Century has 90 employees working three shifts, five days per week. Employees work on Saturdays to perform preventative maintenance on its pollution control equipment. Century's production is spread between two shifts. Production (plating) occurs on two shifts, as well as some polishing. The third shift is only for polishing. Century does not take any extended periods of shutdown and is closed for four days for winter holidays.

Mr. LaPorta said that Century serves the appliance, automotive, and motorcycle industries, as well as tool and truck manufacturers. It plates seat belts and wheel nuts for Nissan and Honda. Century is limited to plating parts less than 48 inches long.

Century has two automated plating lines that are mirror images of each other and plate both nickel and hexavalent chromium on steel for decorative purposes and for added corrosion resistance. Each line also has a nitric acid bath. Century predominately serves the automotive manufacturing industry. They receive brand new, raw product from the automotive industry. The two automated lines are operated five days per week. Line 1 operates 9 – 10 hours per day while Line 2 operates 16 – 18 hours per day. The lines start operating at 6:00 am each day.

Century uses only decorative, hexavalent chromium. Line 1 was installed in 1968. The building that houses Line 2 was installed in 2001, with an addition built on to the main building in 2000. Century completed an electrical reconstruction in 1990. Century has not decommissioned any tanks.

Century maintains a log of amp-hours for its plating tanks. Century controls each plating line with wetting agent and a scrubber. Mr. LaPorta referred to the scrubber on the chromium tanks as a chromium separator, which is only used part-time (and is periodically washed). The 3-stage, wet scrubbers were stack tested initially after installation but haven't been stack tested since. Century periodically washes the screens (which are Kimre® composite mesh pads) in the scrubber along with checking the pressure differential daily. Century checks the exhaust on the scrubber every three months. The wetting agent is used for additional compliance, and though it can be considered to be a control device, it is more so used for better rinsing of parts.

Surface tension tests are performed on the chromium and nickel tanks. Nickel tanks are drained weekly while the chromium tanks are drained every three months. The lab makes a determination on how frequently wetting agent additions are needed based on the chemistry of the tank after analysis.

Mr. LaPorta stated that Century uses coumarin, a product derived from plants that is used as a brightener in the nickel tanks. Coumarin is a sweet smelling product that improves corrosion resistance.

To end the opening conference we asked if Century computes its own emissions for its annual emissions report. Mr. LaPorta stated that Accu-Labs, an outside company, helps Century with environmental compliance and computes its emissions. Ms. Koltse handles the environmental logs and gives them to Accu-Labs.

**Facility Tour**

We exited the conference room at about 10:00 am to begin the facility tour. We began the tour at Line 2. Century employees load the parts on hanging racks for plating. During the inspection, Century was plating seat belts (Photo 1). Mr. LaPorta led us to Line 2 and stated that each line has roughly 25 – 35 stations which include alkaline cleaner tanks, electro cleaner tanks (Line 1 has current), electro acid tanks, water rinse tanks, neutralizer, and a small acid tank.

We walked on Line 2 to observe the process. Mr. LaPorta stated that Line 2 has four nickel plating tanks: Tank 1 is a 20,000 gallon semi-bright nickel tank; Tank 2 is a 1,600 – 1,700 gallon nickel tank; Tank 3 is a 4,700 gallon bright nickel tank; and Tank 4 is a 1,700 gallon nickel tank. Following the nickel plating tanks, Century has a water rinse tank (which reclaims nickel) and then the 1,700 gallon decorative, hexavalent chromium plating tank (Photo 3). Mr. LaPorta pointed out the Magnehelic gage for the decorative, hexavalent chromium tank on Line 2 (Photo 2). Mr. LaPorta stated that the part enters the rinse tank again and then is sent to the dryer (not an oven). Mr. LaPorta pointed out the atmospheric evaporator, which is a closed loop system that receives chromium wash water, removes the moisture to extract the chromium, removes water vapor, and then pumps the chromium back into the chromium plating tanks.

Mr. LaPorta stated that Century has a central tube (located below the ceiling between Line 1 and Line 2) which pumps in fresh air into the facility and runs 24/7.

Century bakes only seat belts in the bake oven to relieve hydrogen embrittlement. Century has two electric ovens which typically bake for 4 hours at a time.

We proceeded to Line 1. I noted a stronger odor on Line 1. Mr. LaPorta stated that Century uses nitric acid to strip the racks after plating. Line 1 is composed of a 20,000 gallon nickel plating tank; 4,500 – 4,700 gallon bright nickel tank and a 1,600 – 1,700 gallon nickel tank. While on Line 1 we walked by the digital read out for the chromium separator which displayed a differential pressure of 2.1 (Photo 4). Mr. LaPorta stated that Century has a scrubber on each nitric acid tank,

two in total which run full-time. The nitric acid tanks have no current and are typically used in 8 hour cycles since parts soak 8 hours at a time.

We proceeded to the 1,300 gallon decorative, hexavalent chromium tank on Line 1 (Photos 5 and Photo 6), used for hand plating. This chromium tank is connected to the scrubber on Line 1.

Next we walked into Century's Polishing Area which has one automated computer numerical control (CNC) polisher. Mr. LaPorta stated that Century has two 12-hour shifts in the Polishing Area and operates five days per week. Century has 10 – 12 hand polishers who operate 8 hours per day. The CNC polisher has four polishing operations and 1 buffing operation. The buffing particulate is sent to a small baghouse while the particulate from the polishing operations are routed to two dry cyclones (one small and one large dry cyclone). The two dry cyclones are routed to the fifth wet scrubber which runs full-time. Mr. LaPorta stated that the polishing fines are not combined with buffing residue as a fire safety precaution.

Walking out of the Polishing Area, Mr. LaPorta pointed out Century's alkaline strip tank. Mr. LaPorta stated that it is used for parts stripping, has no current and is exhausted to the roof.

Mr. LaPorta led us to the lab so we could review records and talk with the chemist currently on duty. Mr. LaPorta stated that Century has two full-time chemists. Mr. LaPorta stated that Century keeps three years of records in the lab for wetting agent use, amp hours, and pressure drops. The pressure drop range for Line 1 is 0.8 inches – 2.8 inches. The pressure drop range for Line 2 is 0.35 inches – 2.35 inches.

We asked to review any stack tests performed at the facility. Mr. LaPorta led us to his office since he kept the records there. We reviewed the pressure drop records and found that Century was outside of its pressure drop range in some instances. We also reviewed a stack test from September 1998 which summarized that Century passed the stack test with an average emission rate of 0.005 mg/dscm total chrome. A second stack test was performed in November 2004, in which on average Century emitted 0.003 mg/dscm of total chrome. Their chromium limit is 0.03 mg/dscm.

I reviewed all of Century's annual emissions reports from 2002 to 2011 and found that Century reported that it emitted 0.000003 tons/year of hexavalent chromium. Prior to 2002, Century did not report chromium emissions. We asked if Century has emissions calculations to show that Century emitted 0.000003 tons/year of hexavalent chromium. Mr. LaPorta stated that he could not locate those records but that we could contact Chris Vallangeou at Accu-Labs since they calculate Century's emissions. Mr. LaPorta provided a copy of Century Plating's emissions calculations which summarizes some of Century's calculations but does not explain, in detail, how Century calculates its emissions.

We reviewed ventilation inspection reports. These inspections occur at three-month intervals. The last inspection was conducted in August 2013. During these inspections, belts, motors, and bearings are changed as needed. Work is also done on the pollution control equipment, as needed.

We asked to review Century's Operation and Maintenance (O & M) Plan. Mr. LaPorta stated that it maintains a spreadsheet for maintenance purposes, but it doesn't have an O & M Plan.

We also reviewed Century's notifications, which included the construction notification for Line 2 and the initial notification.

We went back to the lab to review wetting agent and surface tension records. Century records the date the wetting agent is added but not the time. Century uses a stalagmometer to measure the bath's surface tension approximately 4 to 5 times each month. Century had minimal surface tension testing records and stated that it does regular surface tension testing but historically hasn't always recorded the measured surface tension. Some surface tension testing records reviewed had surface tensions as high as 60 dynes/cm. I requested a copy of one page of the surface tension testing records with high surface tension values.

We completed our record review and tour at approximately 11:40 am.

**Closing Discussion**

We asked Mr. LaPorta if any material we covered or photographed would be considered confidential business information (CBI). Mr. LaPorta said no information conveyed today, nor any process we viewed would be considered CBI. We relayed that we may ask him for additional information and asked if he had any questions. Mr. LaPorta stated that a lot of sweet smells come from the nearby bakery as well as from the chocolate manufacturing facility across the street. We thanked him for his time and departed the facility at about 11:45 am. We also relayed to Mr. LaPorta that 40 C.F.R. Part 63 Subpart N would have new compliance standards which would take effect on September 19, 2014.

**Photos**

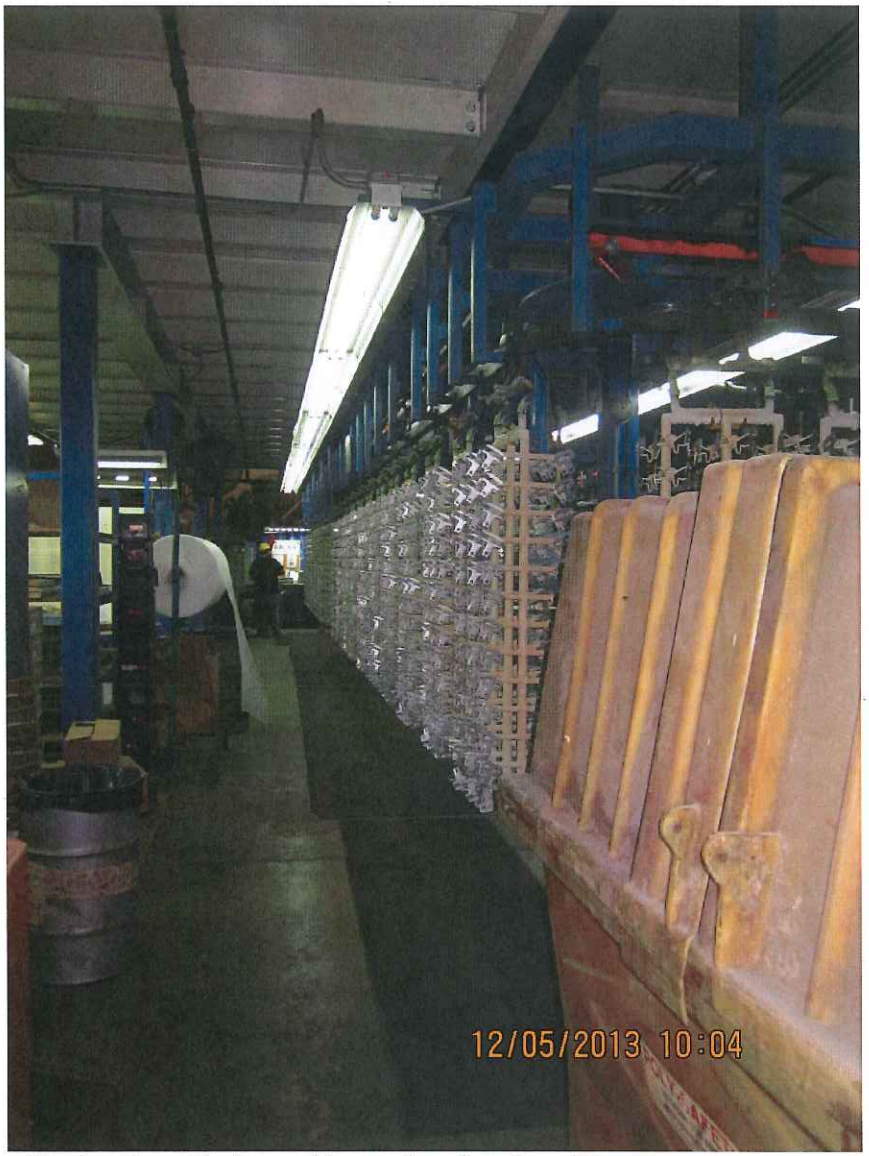


Photo 1: Racks of seat belts waiting to be plated on Line 2.

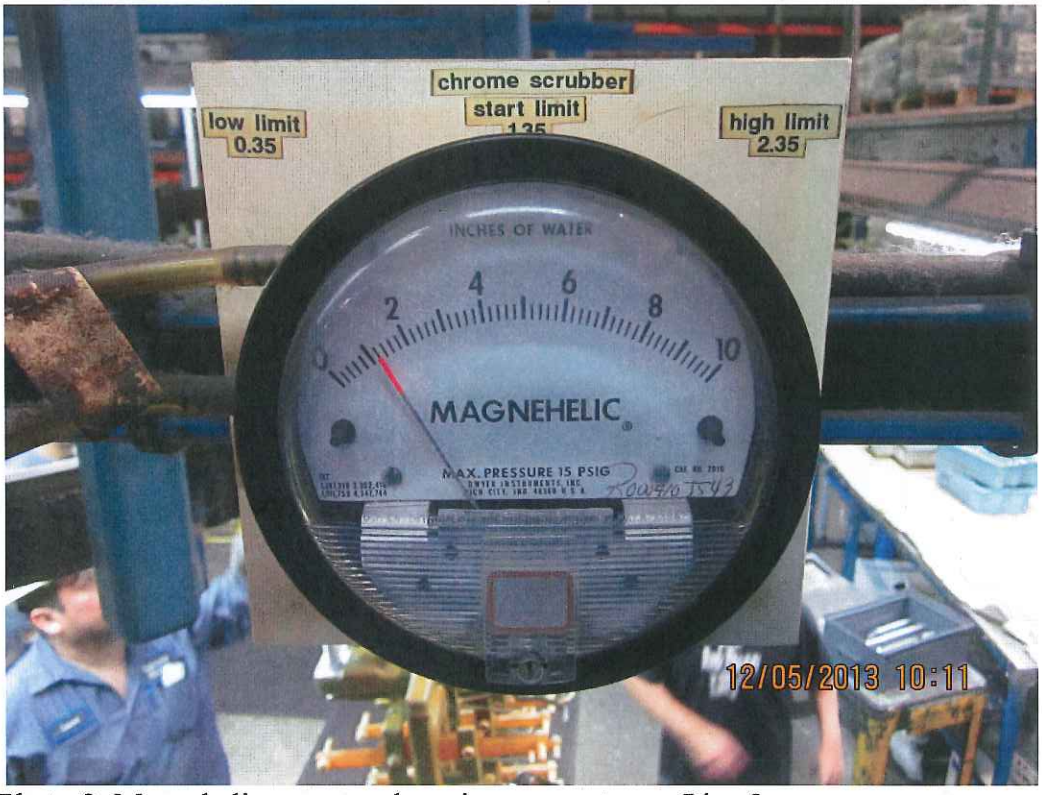

Photo 2: Magnehelic gage on chromium separator on Line 2.

Photo 3: The decorative, hexavalent chromium tank on Line 2.

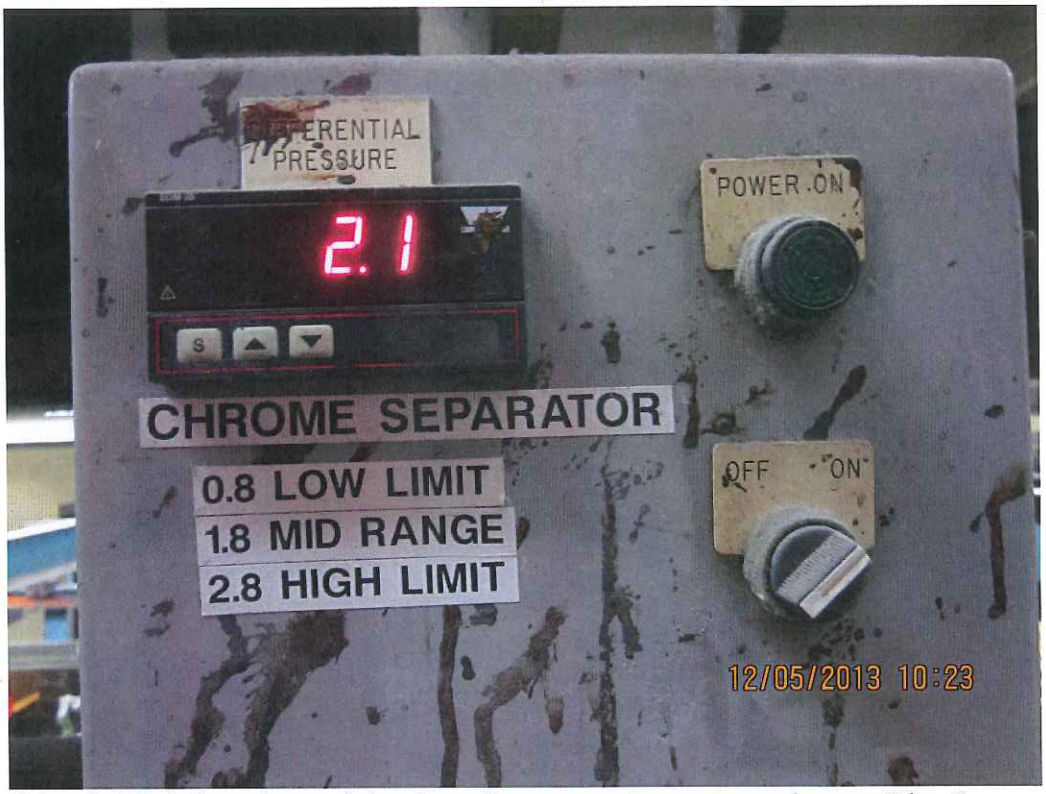

Photo 4: Digital read out of the chromium separator pressure drop on Line 1.

Photo 5: Decorative, hexavalent chromium tank on Line 1.

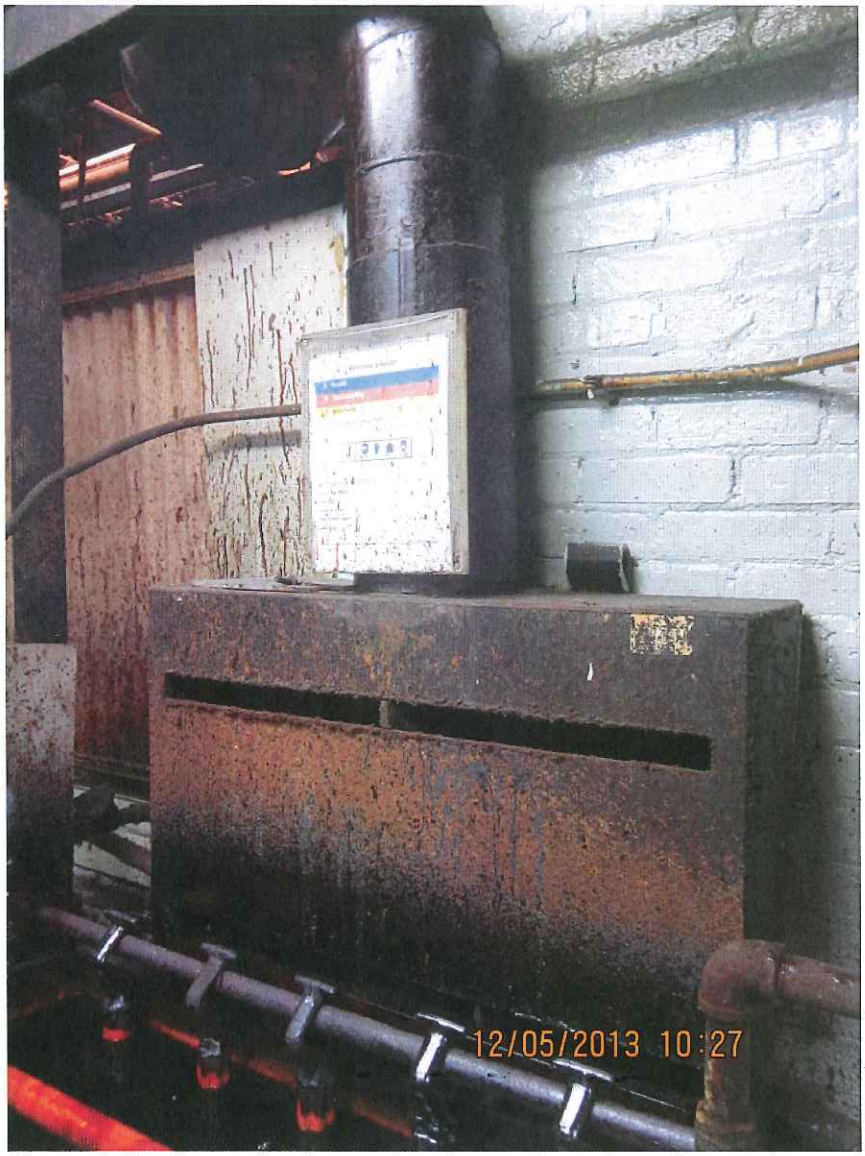

Photo 6: Intake on the decorative, hexavalent chromium tank on Line 1.

Standard bcc:s: official file copy w/attachment (s)
originator's file copy w/attachment (s)
originating organization reading file w/attachment (s)

other bcc's:

Created: March 13, 2014

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